

of these cells. The stomata (pl. 19, figs. F, G) which are confined to the sinuses, occur in parallel rows and number about twelve per square millimeter; the stomatal pore is about 0.0014 millimeters in its long diameter, with the guard cells and the subsidiary cells measuring about 0.040 by 0.035 millimeters. The central portion of each ridge contains sclerenchyma, with a single closed fibrovascular bundle near the base of the ridge. Surrounding the grooves and extending up the sides of the ridges almost to their tops is a narrow band of chlorenchyma, which consists of small, more or less isodiametric, parenchyma cells containing numerous chloroplasts. The top of each ridge is completely filled with sclerenchyma to the point where the chlorenchyma begins. Groups of motor cells (pl. 19, fig. E) are found at the bottom of each of the grooves; the intercellular spaces are small and few. The ridged and grooved surface of the involute blade results in a withdrawal of the chlorenchyma from the light. Transpiration in the leaf is checked by inrolling, by the heavy cutinization of the abaxial surface, and by the infrequent stomata which occur only in the grooves of the inrolled epidermis where they are overlapped by the trichomes.

San Diego, California,  
February 4, 1941.

## AN UNDESCRIBED SPECIES OF CEANOTHUS FROM CALIFORNIA

HOWARD E. McMINN

*Ceanothus Masonii* sp. nov. *C. rigidus* variation 1 McMinn, Contrib. Dudley Herb. 1: 145. 1930, in part. *C. gloriosus* var. *exaltatus* J. T. Howell, Leaf. West. Bot. 2: 44. 1937, in part. Bolinas *Ceanothus*.

Frutex erectus vel erecto-patens, 6–18 dm. altus, ramis crassis arcuato-divaricatis, ramulis rigidis atro-fuscis vel purpureis, tomentulosis demum glabrescentibus; folia opposita persistentia, laminis late ellipticis vel fere orbicularibus, 6–19 mm. longis, 5–12 mm. latis, basi rotundis apice rotundis truncatisve, aliquando emarginatis, supra atroviridibus nitidis glabris, subtus albidis sub microscopio inter venas canescentibus, crebre dentatis dentibus brevibus aut rare leviter sinuato-dentatis ad basim versus integris; stipulae prominentes persistentes, 1.6–5 mm. longae; gemmae squamae fuscae glabrae vel leviter tomentulosae; inflorescentia subumbellata conglomerata, plerumque foliis binatis parvis subtentia, ramos breves (6–19 mm. longis) terminantia; flores atrocyanei vel purpurei; fructus globosus, tricornutus, 5 mm. diametro, cornibus brevibus apicalibus subapicalibusve, sine crestis intermediis instructus.

Erect or erect-spreading shrub, 6–18 dm. tall, with stout rather stiff divaricate branches and rigid dark brown or purplish tomen-

tulose branchlets, becoming glabrous in age; leaves opposite, evergreen; the blades broadly elliptical to oval or nearly orbicular, 6–19 mm. long, 5–12 mm. broad, rounded or sometimes cuneate at base, obtuse, rounded or truncate at apex, sometimes emarginate, dark green, glabrous and glossy above, grayish white and microscopically canescent between veins beneath, margins with numerous short teeth or rarely slightly sinuate-dentate except near base; stipules prominent, persistent, 1.6–5 mm. long; bud scales brown, glabrous, or slightly tomentulose; flowers dark blue to purple, in many-flowered umbel-like clusters usually subtended by a pair of small leaves terminating short lateral branchlets 6–19 mm. long; fruit globose, about 5 mm. in diameter, with 3 short apical or subapical horns, without intermediate crests. Flowering period, March, April.

Type. Along trail on east end of Bolinas Ridge, Marin County, California, April 23, 1933, *McMinn 3044*, deposited in the University of California Herbarium, Berkeley, no. 657,550. Other representative collections: *McMinn 906, 5416, 5417*; transplant series, *McMinn 1574R, 1574O, 1574Q*; *Eastwood & Howell 3838*.

Bolinas *Ceanothus* occurs on Bolinas Ridge, Marin County, California. It is very closely related to *Ceanothus gloriosus* var. *exaltatus* J. T. Howell. These two entities belong to the *C. gloriosus-C. ramulosus-C. purpureus-C. divergens-C. confusus* complex which occurs in the North Coast Ranges of California, in Marin, Sonoma, Napa and Mendocino counties. My first acquaintance with the entity was in February, 1923, when I collected seven small plants (tentatively referring them to *C. rigidus* var. *grandifolius* Torr.) and transplanted them to the trial gardens at Mills College. On March 30, 1923, I revisited the area on Bolinas Ridge in company with Herbert L. Mason. We found vigorous mature plants associated with *Ceanothus foliosus*, *Arctostaphylos sensitiva*, *A. virgata*, *Quercus Wislizenii* var. *frutescens*, *Sphacele calycina* and *Adenostoma fasciculatum*, in an area of about two miles along the ridge. These plants occupied the drier habitats of the ridge crest.

In the late summer of 1924, a fire burned over Bolinas Ridge and destroyed most of the plants. On December 20, 1925, I again collected along the ridge. Not a single old plant of Bolinas *Ceanothus* was found; all had been destroyed by the fire of 1924. However, seedlings were abundant along the trail throughout the area. Twenty-three seedlings, from 4 to 12 inches tall were taken up and transplanted to the trial gardens at Mills College. At this writing, just sixteen years later, all but one (1574R) of the transplants have died. This lone survivor is about 6 feet tall and has a spread of 18 by 18 feet. The trunk at the ground is about 8 inches in diameter.

In October, 1941, Dr. Mason and I studied the species of *Ceanothus* occurring on the south slope of Mount Tamalpais and

along Bolinas Ridge. *Ceanothus Masonii* was the most abundant species along Bolinas Ridge in the area which had been burned in 1924. I do not know how many times the ridge has been burned over subsequently; however, since some of the plants appeared to be at least six or seven years old, no destructive fires have occurred since 1935. Many seedlings and young plants abound in and along the ridge trail which has been cleared from time to time for use as a fire road. In addition to many plants of typical Bolinas *Ceanothus*, a few plants with leaves simulating those of *C. purpureus* Jepson, and a few with leaves intermediate between the two, were observed. A few plants with the large leaves and habit of growth of *C. gloriosus* var. *exaltatus* and others with smaller leaves intermediate between those of *C. ramulosus* (Greene) McMinn and *C. purpureus* were found growing along the ridge. These facts supported by additional observations made upon certain *Ceanothus* entities occurring in the North Coast Ranges, lead to the conclusion that Bolinas *Ceanothus* is a member of a large complex, which may consist of several species occupying different geographical and probably ecological niches.

Mills College, California,  
November 27, 1941.

## NOTES AND NEWS

RANGE EXTENSIONS IN SPECIES OF WESTERN NORTH AMERICA. New localities have been reported recently for the following species:

**BOYKINIA JAMESII** Engelm. var. **HEUCHERIFORMIS** (Rydb.) Rosendahl. Growing in crevices of limestone cliffs, altitude 8800 feet, Canadian zone, above White Pine Lake, northeast slopes of Mount Magog, Cache County, Utah, July 17, 1936, *Maguire 14046*. This species is known from Colorado, Idaho and Nevada, but heretofore has not been reported from Utah.

**SAXIFRAGA ERIOPHORA** S. Watson. This rare plant, apparently known previously only from the type locality in the Santa Catalina Mountains, Arizona, has been collected as follows: common, moist ravine slopes along stream course in yellow pine and oak, altitude 8500 feet, Pine Crest, Pinaleno (Graham) Mountains, Graham County, Arizona, April 17, 1935, *B. & R. Maguire 10545*; altitude 8000 feet, May 26, 1936, *B. & R. Maguire 12012*, May 28, 1935, *B. & R. Maguire 12014*.—BASSETT MAGUIRE, Intermountain Herbarium, Utah State Agricultural College, Logan.

**ERIODICTYON CAPITATUM** Eastwood. Previously known only from Pine Canyon on Burton Mesa, five miles north of Lompoc, this species was discovered in a canyon on the James J. Hollister ranch, approximately five miles northeast of Point Conception, Santa Barbara County, California. Here, on a west-facing slope, elevation 900 feet, at the head of the west fork of Barranca